

PURA18WO.ST25
SEQUENCE LISTING

<110> PURATOS N.V.
<120> MYROTHECIUM SP. TRANSFORMATION AND EXPRESSION SYSTEM
<130> P.PURA18.WO
<160> 37
<170> PatentIn version 3.2
<210> 1
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<212> DNA
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<223> LR0R primer
<400> 1
accgcgtgaa ctttagc 17

<210> 2
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<212> DNA
<213> Artificial
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<223> LR6 primer
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cgccagttct gcttacc 17

<210> 3
<211> 17
<212> DNA
<213> Artificial
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<223> LR3R primer
<400> 3
gtcttgaaac acggacc 17

<210> 4
<211> 17
<212> DNA
<213> Artificial
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<223> LR3 primer
<400> 4
ccgtgtttca agacggg 17

<210> 5
<211> 19
<212> DNA
<213> Artificial
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<223> ITS1 primer

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<400> 5
tccgtaggtg aacctgcgg

19

<210> 6
<211> 20
<212> DNA
<213> Artificial

<220>
<223> ITS4 primer

<400> 6
tcctccgctt attgatatgc

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<210> 7
<211> 1052
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> 28s rDNA sequence of the strain MUCL39210

<400> 7
cagggattgc ctcagtaacg gcgagtgaag cggcaacagc tcaaatttga aatctggccc 60
cccggcccga gttgtaattt gcagaggatg cttttggcga ggtgccttcc gagttccctg 120
gaacgggacg ccatagaggg tgagagcccc gtctggtcgg acaccgagcc tctgtaaagc 180
tccttcgacg agtcgagtag tttgggaatg ctgctcaaaa tgggaggtat atgtcttcta 240
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actttgaaaa gagagttaaa cagcacgtga aattgttaaa agggaagcgt ttatgaccag 360
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tcagttcgtc gcgggggata aaggtttcgg gaatgtggct cctccgggag tgttatagcc 480
cgttgcgtaa taccctgcgg tggactgagg tccgcgcttc tgcaaggatg ctggcgtaat 540
ggtcacaaac gaccctgctt gaaacacgga ccaaggagtc gtcttcgtat gcgagtgttc 600
gggtgtaaaa cccctacgcg taatgaaagt gaacgcaggt gagagcttcg gcgcatcatc 660
gaccgatcct gatgttctcg gatggatttg agtaagagca tacggggccg gaccgaaaag 720
aagggtgaact atgcctgtat aggggtgaagc cagaggaaaac tctggtggag gctcgacgag 780
gttctgacgt gcaaatcgat cgtcaaataa gggcatgggg gcgaaagact aatcgaacct 840
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gaggtaaagc gaatgattag ggactcgggg gcgctattta gccttcatcc attctcaaac 960
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ctagtgggcc atttttggta agcagaactg gc 1052

<210> 8
<211> 1040
<212> DNA
<213> Myrothecium

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<220>
<221> misc_feature
<223> 28s rDNA sequence of the strain MUCL11831

<400> 8
cagggattgc cttagtaacg gcgagtgaag cggcaacagc tcaaatttga aatctggacc 60
tagtcccagag ttgtaatttg cagaggatga ttttggcgcg gtgccttcca agttccctgg 120
gacgggacgc cggagagggg gagagccccg tcaggttgga caccaagcct atgtaaatct 180
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ctttggaaaag agagttaaac agcacgtgaa attgttaaaa gggaagcggt tacgaccaga 360
cttgtgccgg ttgatcatcc agcgttctcg ctggtgcact ctgccggccc aggccagcat 420
cagttcgccg cgggggataa aggcgtcggg aatgtggctc ccccgaggag gttatagccc 480
ttcgcgcaat accctgaggg ggactgaggt tcgcgcattc gcaaggatgc tggcgtaatg 540
gtcgtcaacg acccgtcttg aaacacggac caaggagtcg tcttcgtatg cgagtgttcg 600
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aggtgaacta tgctgtata ggggtgaagcc agaggaaact ctggtggagg ctcgcagcgg 780
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aggtaaagcg aatgattagg gactcggggg cgctatttag cttcatcca ttctcaaact 960
ttaaatatgt aagaagccct tgttgcttaa ttgaacgtgg gcattcgaat gtatcaacac 1020
tagtgggcca tttttggtaa 1040

<210> 9
<211> 1012
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> 28s rDNA sequence of the strain CBS449.71

<400> 9
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taggcccagag ttgtaatttg cagaggatgc ttttggcaag gtgccttccg agttccctgg 120
aacgggacgc catagagggg gagagccccg tctggctgga caccgagcct ctgtaaagct 180
ccttcgacga gtcgagtagt ttgggaatgc tgctcaaat gggaggtata tgtcttctaa 240
agctaaatac cggccagaga ccgatagcgc acaagtagag tgatcgaaag atgaaaagca 300
ctttgaaaag agagttaaact agcacgtgaa attgttgaaa gggaagcggt tatgaccaga 360
cttggcccgg ttgatcatcc agccttctgg ctggtgcact ctgccggtcc aggccagcat 420

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cagttcgtcg cgggggataa aggtttcggg aatgtagctc ctccgggagt gttatagccc 480
 gttgcgtaat accctgcggt ggactgaggt ccgcgctctg caaggatgct ggcgtaatgg 540
 tcatcaacga cccgtcttga aacacggacc aaggagtcgt cttcgtatgc gagtgttcgg 600
 gtgtaaaacc cctacgcgta atgaaagtga acgcaggtga gagcttcggc gcatcatcga 660
 cccatcctga tgttctcggg tggatttgag taagagcata cggggccgga cccgaaagaa 720
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 tctgacgtgc aaatcgatcg tcaaatatgg gcatgggggc gaaagactaa tcgaaccttc 840
 tagtagctgg tttccgccga agtttccctc aggatagcag tgttgaaactc agttttatga 900
 ggtaaagcga atgattaggg actcgggggc gctatttagc cttcatccat tctcaaactt 960
 taaatatgta agaagccctt gttgcttaat tgaacgtggg cattcgaatg ta 1012

<210> 10
 <211> 1038
 <212> DNA
 <213> Myrothecium

<220>
 <221> misc_feature
 <223> 28s rDNA sequence of the strain IMI140595

<400> 10
 cagggattgc ctacagtaacg gcgagtgaag cggcaacagc tcaaatttga aatctggccc 60
 tagggccgag ttgtaatttg cagaggatgc ttttgccgag gtgccttcg agttccctgg 120
 aacgggacgc catagagggt gagagccccg tctggtcgga caccgagcct ctgtaaaagt 180
 ccttcgacga gtcgagtagt ttgggaatgc tgctcaaaat gggaggtata tgtcttctaa 240
 agctaaatac cggccagaga ccgatagcgc acaagtagag tgatcgaaag atgaaaagca 300
 ctttgaagag agagttaaag agcacgtgaa attgttgaaa ggggaagcgtt tatgaccaga 360
 cttggcccgg ttgatcatcc agcgttctcg ctggtgcact ctgccggtcc aggccagcat 420
 cagttcgcg cgggggataa aggtttcggg aatgtggctc ctccgggagt gttatagccc 480
 gttgcgtaat accctgcggt ggactgaggt ccgcgcttct gcaaggatgc tggcgtaatg 540
 gtcataacg acccgtcttg aaacacggac caaggagtcg tcttcgtatg cgagtgttcg 600
 ggtgtaaaac ccctacgcgt aatgaaagtg aacgcaggtg agagcttcgg cgcacatcgc 660
 accgatcctg atgttctcgg atggatttga gtaagagcat acggggccgg acccgaaaga 720
 aggtgaacta tgcctgtata ggtgaagcc agaggaaact ctgggtggagg ctcgcagcgg 780
 ttctgacgtg caaatcgatc gtcaaatatg ggcatggggg cgaaagacta atcgaacctt 840
 ctagtagctg gtttccgccg aagtttccct caggatagca gtgttgaaact cagttttatg 900
 aggtaaagcg aatgattagg gactcggggg cgctatttag cttcatcca ttctcaaact 960
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 tagtgggcca tttttggt 1038

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<210> 11
<211> 1044
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> 28S rDNA sequence of the strain IMI29040

<400> 11
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cccggcccga gttgtaattt gcagaggatg cttttggcaa ggtgccttcc gagttccctg 120
gaacgggacg ccatagaggg tgagagcccc gtctggctcg acaccgagcc tctgtaaagc 180
tccttcgacg agtcgagtag tttgggaatg ctgctcaaaa tgggaggtat atgtcttcta 240
aagctaaata cgggccagag accgatagcg cacaagtaga gtgatcgaaa gatgaaaagc 300
actttgaaaa gagagttaaa tagcacgtga aattgttgaa agggaagcgt ttatgaccag 360
acttggcccg gttgatcatc cagcgttctc gctggtgcac tctgccggtc caggccagca 420
tcagttcgtc gcgggggata aaggcttcgg gaatgtagct ctcttcgggg agtggttatag 480
cccgttgtgt aataccctgc ggtggactga ggtccgcgct ctgcaaggat gctggcgtaa 540
tggtcatcac gaccgtcttg aaacacggac caaggagtcg tcttcgtatg cgagtgttcg 600
ggtgtaaaac ccctacgcgt aatgaaagtg aacgcagggt agagcttcgg cgcatcatcg 660
accgatcctg atgttctcgg atggatttga gtaagagcat acggggccgg acccgaaaga 720
aggtgaacta tgcctgtata ggggtgaagc agaggaaact ctggtggagg ctcgcagcgg 780
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ctagtagctg gtttccgccg aagtttccct caggatagca gtgttgaaact cagttttatg 900
aggtaaagcg aatgattagg gactcggggg cgctattttag cttcatcca ttctcaaact 960
ttaaatatgt aagaagccct tgttgcttaa ttgaacgtgg gcattcgaat gtatcaacac 1020
tagtgggcca tttttggtaa gcag 1044

<210> 12
<211> 445
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> ITS sequence of the strain MUCL39210

<400> 12
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ctatgtttta ctgtacatct cctctgagtg acacataaac aataaataaa aacttttaac 120
aacggatctc ttggttctgg catcgatgaa gaacgcagcg aaatgcgata agtaatgtga 180
attgcagaat tcagtgaatc atcgaatctt tgaacgcaca ttgcgccccg cagtattctg 240

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gcgggcatgc ctgttcgagc gtcatttcaa ccctcaggcc ccagtgctt ggcgttggg 300
atcggcacca gggcgctccgc gcaagcggtc tccccgccgg ccccgaaatc tagtggcgg 360
ctcgtctgtag tcctcctctg cgtagtagca caacctcgca gctggaactc ggcggtggcc 420
ctgccgttaa acacccact tctga 445

<210> 13
<211> 459
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> ITS sequence of the strain MUCL11831

<400> 13
gcgggctcag cccccgcgcc ctgccggcg ccgggaaaca ggcgccgcc ggagacccaa 60
actcaatggt tttcatgcag tattatctga gtggcaaacg caaaaaataa atcaaaactt 120
ttaacaacgg atctcttggc tctggcatcg atgaagaacg cagcgaaatg cgataagtaa 180
tgtgaattgc agaattcagt gaatcatcga atctttgaac gcacattgcg ccgcgagta 240
ttctcgcggg catgcctgtc cgagcgtcat ttcaaccctc agggcccgcc tgcttgagg 300
cgcggcgctg gtgttgggga tcggccctaa accgccgtcc ccaaattca gtggcggtct 360
cgctgcagcc tcccctgcgt agtagcaaca ctgcgatgcg gagcgcgggc cgccacgcc 420
gtaaaacccc cgactttctg aacgttgacc tcggatcag 459

<210> 14
<211> 423
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> ITS sequence of the strain CBS449.71

<400> 14
gcgggaccgc cccggcgctt tcgggcccgg aaccaggcgc ccgccggagg ccccaaactc 60
ttatgtcttt agtggttttc tcctctgagt gacacataaa caaataaata aaaactttca 120
acaacggatc tcttggttct ggcatcgatg aagaacgcag cgaaatgcga taagtaatgt 180
gaattgcaga attcagtga tcatcgaatc tttgaacgca cattgcgccc gccagtattc 240
tggcgggcat gcctgttcga gcgtcatttc aaccctcagg ccccgagtc ctggtgttgg 300
ggatcgcccc agccttctcg caaggccgcc ggccccgaaa tctagtggcg gtctcgctgt 360
agtcctctc tgctgtagtag cacaacctcg cagttggaac gcggcggtgg ccatgccgtt 420
aaa 423

<210> 15
<211> 445

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<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> ITS sequence of the strain IMI140595

<400> 15
gcgggaccgc cccggcgccc tcgcgccccg gaccagggcg cccgccggag accccaaact 60
ctatgtttta ctgtacatct cctctgagt acacataaac aataaataaa aactttcaac 120
aacggatctc ttggttctgg catcgatgaa gaacgcagcg aaatgcgata agtaatgtga 180
attgcagaat tcagtgaatc atcgaatctt tgaacgcaca ttgcgccccg cagtattctg 240
gcgggcatgc ctgttcgagc gtcatttcaa ccctcaggcc cccagtgcct ggcgttgggg 300
atcggtcag gggcgaccgc gcaagcggcc gcttcccgcc ggccccgaaa tctagtggcg 360
gtctcgtgt agtcctctc tgcgtagtag cacaacctcg cagctggaac gcggcggtgg 420
ccctgccgta aaacacccca cttct 445

<210> 16
<211> 434
<212> DNA
<213> Myrothecium

<220>
<221> misc_feature
<223> ITS sequence of the strain IMI290405

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tcatgtcttt agtggttttc tcctctgagt gacacataaa caaataaata aaaactttca 120
acaacggatc tcttggttct ggcatcgatg aagaacgcag cgaaatgcga taagtaatgt 180
gaattgcaga attcagtga tcatcgaatc ttgaaacgca cattgcgccc gccagtattc 240
tggcgggcat gcctgttcga gcgtcatttc aaccctcagg ccccagtgcc ctggcggttg 300
ggatcggcag caggcggtca agcccgccg ccccgaaatc tagtggcggt ctgctgtag 360
tcctcctctg cgtagtagca caacctcgca gttggaacgc ggcggtggcc atgccgttaa 420
acacccact tctg 434

<210> 17
<211> 24
<212> DNA
<213> Artificial

<220>
<223> AMY1 primer

<400> 17
ggaattccac agaaggcatt tatg 24

<210> 18
<211> 23

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<212> DNA
<213> Artificial

<220>
<223> AMY2 primer

<400> 18
gctctagagc aaccaccagg tca

23

<210> 19
<211> 17
<212> DNA
<213> Artificial

<220>
<223> Gpd1 primer

<220>
<221> misc_feature
<222> (3)..(3)
<223> n is A, C, T or G

<220>
<221> misc_feature
<222> (12)..(12)
<223> n is dInosine

<400> 19
ggnatcaayg gnttcgg

17

<210> 20
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Gpd2 primer

<400> 20
gtgswgswgg ggatgatgtt

20

<210> 21
<211> 23
<212> DNA
<213> Artificial

<220>
<223> Gpd3 primer

<220>
<221> misc_feature
<222> (12)..(12)
<223> n is A, C, T or G

<220>
<221> misc_feature
<222> (18)..(18)
<223> n is dInosine

<400> 21
ggtcgtatcg tnttycgnaa ygc

23

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<210> 22
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <223> Gpd4 primer

<220>
 <221> misc_feature
 <222> (18)..(18)
 <223> n is dInosine

<400> 22
 ggagccaggc agttggtngt rca

23

<210> 23
 <211> 836
 <212> DNA
 <213> Myrothecium

<220>
 <221> misc_feature
 <223> gpd gene sequence of the strain MUCL11831

<400> 23
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 ggaccgtcga cggctcttctg ggtggcagtg taggagtgga cggtggtcat gagaccctca 120
 atgatggtgt acttgctcgtt gaggaccttg gcgaggggag ccaggcagtt ggtggtgcac 180
 gaggcgttgg agatgacatc ggcgctgccg tcgtaggctt tctcgttgac gcccatcacg 240
 tacatggggg catcggcgga gggggcggag atgatgacct tcttggcacc gccagcaagg 300
 tgagccttgg ccttgctcgtt ggtggtgaag acaccggtgg actcgacaat gtactcggcg 360
 ccggtctcct tccaggggat ggaggcggg tcacgctcgg tgtagaagcg gaccttcttg 420
 ccgttgacgc tcaggtcagc gccatcggcc tcgacctcac cttgaagag accgtgggtg 480
 gagtcatact tgagcatgta ggcctagatg gtggtcagct aaagcgctca tttcaagaca 540
 aagaaagcag atgtcaaggt tggcgggaaa agacgatgga ggggcacggg tttggacatg 600
 gttgcaggta ggtggggtgc aacggcccat gtcattgcaa gcatgccatg tcgggttttg 660
 cccctcggat tggatttctt ttttcgcgcc gcatcatgta aagtgggggg aggggcagca 720
 ctcacggcgt acttggtctc gatgaagggg tcgttgacgg cgacaatctc aatgtcgggg 780
 tgctcgacgg cgttgcggaa gacgatacga ccgatgcggc cgaaccatt gatccc 836

<210> 24
 <211> 954
 <212> DNA
 <213> Myrothecium

<220>
 <221> misc_feature
 <223> gpd gene sequence of the strain CBS449.71

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<400> 24
 gtgcagctgg ggatgatgtt ctgggcagca ccacggccac cgcgccagtc cttggcggag 60
 ggaccgtcaa cggctcttctg ggtggcagtg tagagtggac ggtgggtcatg agaccctcaa 120
 tgatggtgaa cttgtcgttg atgaccttg cgaggggagc caggcagttg gtggtgcaag 180
 aagcgttgga gatgacgtcg gcgctgccgt cgtaggtctc ctcgttgaca cccataacgt 240
 acatgggggc atcggcggag ggagcagaga tgatgacctt cttggcacca cccttcaagt 300
 gagcagcagc cttgtccttg gtggtgaaga caccagtggg ctcgacgatg tactcggcgc 360
 cagtctcctt ccaggggatg gcagcggggt cgcgctcagt gtagaagcgg accttcttgc 420
 cgttgacagt gaggtcggca ccatcgacgg agacctcacc cttgaagaga ccgtgggtag 480
 agtcatactt gagcatgtag gcctagttaa caggggtggt tagcggaatg gccggcagag 540
 agagagtaat tgcggcatga cgaggcgttg gagggaggag cagtcctctg ccatgacgat 600
 agcattggct attgattcat tcgccgcctt gacagagggc tcgttgaact gcaccaacgc 660
 atgatatcat catggagggg caaatattga cgtgtaattg tggggtgaat ggcagagtgg 720
 ttgcgttttt tctgcccctc acttgagat ggccgtgtcg cgtctgcccc tcgtctcctt 780
 gcaagtgcag ggtggactgc agctcgcttg ctagttgtt ggctgaagg aaacagcact 840
 tacagcgtac ttgggtcaa tgaaggatc gttgacggca acgatctcga cgtcgtcgtg 900
 ctcgacggcg ttgcggaaga cgatacgacc aatgcggccg aaccattga tccc 954

<210> 25
 <211> 1055
 <212> DNA
 <213> Myrothecium

<220>
 <221> misc_feature
 <223> gpd gene sequence of the strain IMI290405

<400> 25
 gtggtggagg ggatgatgtt ctgggcagca ccacggccac cagccagtc cttggcggag 60
 ggaccatcga cggctcttctg ggtggcagtg taggagtggg cagtgggtcat gagaccctca 120
 atgatggtga acttgtcgtg aatgaccttg gcgagaggag ccaggcagtt ggtggtgcag 180
 gaggcgttg agatgacgtc ggcgctgccg tcgtaggtct cctcgttgac acccataacg 240
 tacatgggag catcagcaga gggggcagag atgatgacct tcttggcacc acccttcaag 300
 tgagcagcgg cttgtcctt ggtggtgaag acaccggttg actcgacgat gtagtcggcg 360
 ccagtctcct tccaagggat ggcagcgggg tcacgctcag ttagaagcg gaccttcttg 420
 ccgttgacgg tcaggctcag gccatcgacg gtgacctcac cttgaagac gccgtgggtg 480
 gagtcatact tgagcatgta ggcctatgct tggatggtg tgggaagcat gagtgaattg 540
 gagggattgc gtgagggtga tgaagcatca ttgtggtgtg tcaatggggc tgtttctgct 600
 gctgctggcg gcggtgttg gtggtggtga caaaagaaat ttgttgagcg ggaaagggat 660
 agacggcggc gcatgatatc atggaggggc aaatattgac gcgctgatga tagtgggggtg 720

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atttttggag gcacctggtt ttgtctttgg ttgcattttt tctgcccctc actcggctcg 780
 tccgtgtctg cggcgcgct ctgcccctcc tctgtctgca cagagtgcac gctgggctgc 840
 agccagctcc gttgcccgt cgctcgctcg cctgcgtgcc ttgtcccttt ggagctgagg 900
 ggaaagaggt gggatcgaga tcacaatcaa aaggttgtac tcacagcgta ggtgggctca 960
 atgaagggat cgttgacggc aacgatctcg acgtcggagt gctcgacggc gttgcggaag 1020
 acgatacgac caatgcggcc gaacccattg atacc 1055

<210> 26
 <211> 850
 <212> DNA
 <213> Myrothecium

<220>
 <221> misc_feature
 <223> gpd gene sequence of Myrothecium gramineum (Xepiculopsis graminea)
 MUCL39210

<400> 26
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 tacgtgtaa gtgtgcttc tgcttcccct cagtcgacga gcgagccaa agccgagctg 120
 cagctagcgg agccatgcgc tgcttgcacg cactgcata acagcagcta gaggaggggt 180
 acacggccgc gcgcgcagac acacatacaa caccaccacc accaaaagga ggggcagaaa 240
 aaatccagca ttgtccgatt tcacccacc atctcacgtc aaccaatttg cccctccatg 300
 atatcatgtg tccgcgcca gctcaacacg tccacctcct ctggccaatg gcgagcgcat 360
 tgatgctttg atgagcggaa acgacgctga ggccctcagc ctcgtcgtcg ctgccgctgc 420
 cgccgcgcgc cgctcacgca tcggcgggct cccgtcgtcg ggcttcaatt gacatgacat 480
 gatgcatggc caccgtgcta accaccctg tgtctgtccg ataggcctac atgctcaagt 540
 atgactctac ccacggtctc ttcaaggggt aggtcacctg cgatggcgat gacctgaccg 600
 tcaacggcaa gaaggtccgc ttctacactg agcgtgacct cgccgccatc ccctggaagg 660
 agactgggtg cgagtacatt gtcgagtcca ccggtgtctt caccaccaag gacaaggctg 720
 ctgtcacct gaaggggtgt gccaagaagg tcatcatctc tgccccctct gccgatgcc 780
 ccatgtacgt tatgggtgtc aacgaggaga cctacgacgg cagcgccgac gtcattctca 840
 acgcttcttg 850

<210> 27
 <211> 130
 <212> PRT
 <213> Myrothecium

<220>
 <221> MISC_FEATURE
 <223> glyceraldehyde 3-P dehydrogenase sequence of Myrothecium
 gramineum (Xepiculopsis graminea) MUCL39210

PURA18WO.ST25

<400> 27

Ala Val Glu His Ser Asp Val Glu Ile Val Ala Val Asn Asp Pro Phe
 1 5 10 15

Ile Glu Pro Lys Tyr Ala Ala Tyr Met Leu Lys Tyr Asp Ser Thr His
 20 25 30

Gly Leu Phe Lys Gly Glu Val Thr Val Asp Gly Asp Asp Leu Thr Val
 35 40 45

Asn Gly Lys Lys Val Arg Phe Tyr Thr Glu Arg Asp Pro Ala Ala Ile
 50 55 60

Pro Trp Lys Glu Thr Gly Ala Glu Tyr Ile Val Glu Ser Thr Gly Val
 65 70 75 80

Phe Thr Thr Lys Asp Lys Ala Ala Ala His Leu Lys Gly Gly Ala Lys
 85 90 95

Lys Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro Met Tyr Val Met
 100 105 110

Gly Val Asn Glu Glu Thr Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn
 115 120 125

Ala Ser
 130

<210> 28
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <223> hphpCSN431 primer

<400> 28
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21

<210> 29
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> hphpCSN432 primer

<400> 29
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18

<210> 30
 <211> 16
 <212> DNA
 <213> Artificial

<220>

PURA18WO.ST25

<223> GPD2 primer
 <400> 30
 tctggcatgc ggagag 16

<210> 31
 <211> 16
 <212> DNA
 <213> Artificial

<220>
 <223> AMY5 primer
 <400> 31
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<210> 32
 <211> 850
 <212> DNA
 <213> Myrothecium

<220>
 <221> CDS
 <222> (1)..(66)

<220>
 <221> misc_feature
 <222> (1)..(850)
 <223> partial nucleotide sequence and its deduced protein sequence of
 the Myrothecium gramineum MUCL39210 glyceraldehyde-3-P
 dehydrogenase gene

<220>
 <221> CDS
 <222> (525)..(848)

<400> 32
 gcc gtc gag cac tcc gac gtc gag atc gtt gcc gtc aac gac ccc ttc 48
 Ala Val Glu His Ser Asp Val Glu Ile Val Ala Val Asn Asp Pro Phe
 1 5 10 15

att gag ccc aag tac gct gtaagtgtg cttctgttc ccctcagtcg 96
 Ile Glu Pro Lys Tyr Ala
 20

acgagcgagc ccaaagccga gctgcagcta gcggagccat gcgctgcctg catgccactg 156
 cataacagca gctagaggag ggggtacacgg ccgcgcgcgc agacacacat acaacaccac 216
 caccaccaaaggaggggcga gaaaaaatcc agcattgtcc gatttcaccc caccatctca 276
 cgtcaaccaa tttgcccctc catgatatca tgtgtccgcg cccagctcaa cacgtccacc 336
 tcctctggcc aatggcgagc gcattgatgc tttgatgagc ggaaacgacg ctgaggccct 396
 cagcctcgtc gtcgctgccg ctgccgccgc gcgccgtca cgcacggcg ggctcccgtc 456
 gctgggcttc aattgacatg acatgatgca tggccaccgt gctaaccacc cctgtgtctg 516
 tccgatag gcc tac atg ctc aag tat gac tct acc cac ggt ctc ttc aag 566
 Ala Tyr Met Leu Lys Tyr Asp Ser Thr His Gly Leu Phe Lys
 25 30 35

ggt gag gtc acc gtc gat ggc gat gac ctg acc gtc aac ggc aag aag 614
 Gly Glu Val Thr Val Asp Gly Asp Asp Leu Thr Val Asn Gly Lys Lys

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40 45 50
 gtc cgc ttc tac act gag cgt gac ccc gcc gcc atc ccc tgg aag gag 662
 Val Arg Phe Tyr Thr Glu Arg Asp Pro Ala Ala Ile Pro Trp Lys Glu
 55 60 65
 act ggt gcc gag tac att gtc gag tcc acc ggt gtc ttc acc acc aag 710
 Thr Gly Ala Glu Tyr Ile Val Glu Ser Thr Gly Val Phe Thr Thr Lys
 70 75 80
 gac aag gct gct gct cac ctg aag ggt ggt gcc aag aag gtc atc atc 758
 Asp Lys Ala Ala Ala His Leu Lys Gly Gly Ala Lys Lys Val Ile Ile
 85 90 95 100
 tct gcc ccc tct gcc gat gcc ccc atg tac gtt atg ggt gtc aac gag 806
 Ser Ala Pro Ser Ala Asp Ala Pro Met Tyr Val Met Gly Val Asn Glu
 105 110 115
 gag acc tac gac ggc agc gcc gac gtc atc tcc aac gct tct tg 850
 Glu Thr Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn Ala Ser
 120 125 130

<210> 33
 <211> 22
 <212> PRT
 <213> Myrothecium

<400> 33

Ala Val Glu His Ser Asp Val Glu Ile Val Ala Val Asn Asp Pro Phe
1 5 10 15

Ile Glu Pro Lys Tyr Ala
20

<210> 34
 <211> 108
 <212> PRT
 <213> Myrothecium

<400> 34

Ala Tyr Met Leu Lys Tyr Asp Ser Thr His Gly Leu Phe Lys Gly Glu
1 5 10 15

Val Thr Val Asp Gly Asp Asp Leu Thr Val Asn Gly Lys Lys Val Arg
20 25 30

Phe Tyr Thr Glu Arg Asp Pro Ala Ala Ile Pro Trp Lys Glu Thr Gly
35 40 45

Ala Glu Tyr Ile Val Glu Ser Thr Gly Val Phe Thr Thr Lys Asp Lys
50 55 60

Ala Ala Ala His Leu Lys Gly Gly Ala Lys Lys Val Ile Ile Ser Ala
65 70 75 80

Pro Ser Ala Asp Ala Pro Met Tyr Val Met Gly Val Asn Glu Glu Thr
85 90 95

PURA18WO.ST25

Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn Ala Ser
 100 105

<210> 35
 <211> 204
 <212> PRT
 <213> Myrothecium

<220>
 <221> MISC_FEATURE
 <223> partial GPD protein sequence from the strain MUCL39210
 <400> 35

Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Ile Val Phe Arg Asn Ala
 1 5 10 15

Val Glu His Pro Asp Ile Glu Ile Val Ala Val Asn Asp Pro Phe Ile
 20 25 30

Glu Thr Lys Tyr Ala Ala Tyr Met Leu Lys Tyr Asp Ser Thr His Gly
 35 40 45

Leu Phe Lys Gly Glu Val Glu Ala Asp Gly Ala Asp Leu Ser Val Asn
 50 55 60

Gly Lys Lys Val Arg Phe Tyr Thr Glu Arg Asp Pro Ala Ser Ile Pro
 65 70 75 80

Trp Lys Glu Thr Gly Ala Glu Tyr Ile Val Glu Ser Thr Gly Val Phe
 85 90 95

Thr Thr Thr Asp Lys Ala Lys Ala His Leu Ala Gly Gly Ala Lys Lys
 100 105 110

Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro Met Tyr Val Met Gly
 115 120 125

Val Asn Glu Lys Thr Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn Ala
 130 135 140

Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala Lys Val Leu Asn Asp
 145 150 155 160

Lys Tyr Thr Ile Ile Glu Gly Leu Met Thr Thr Val His Ser Tyr Thr
 165 170 175

Ala Thr Gln Lys Thr Val Asp Gly Pro Ser Ala Lys Asp Trp Arg Gly
 180 185 190

Gly Arg Gly Ala Ala Gln Asn Ile Ile Pro Thr Thr
 195 200

PURA18WO.ST25

<210> 36
 <211> 204
 <212> PRT
 <213> Myrothecium

<220>
 <221> MISC_FEATURE
 <223> partial GPD protein sequence from the strain MUCL11831

<400> 36

Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Ile Val Phe Arg Asn Ala
 1 5 10 15

Val Glu His Asp Asp Val Glu Ile Val Ala Val Asn Asp Pro Phe Ile
 20 25 30

Glu Pro Lys Tyr Ala Ala Tyr Met Leu Lys Tyr Asp Ser Thr His Gly
 35 40 45

Leu Phe Lys Gly Glu Val Ser Val Asp Gly Ala Asp Leu Thr Val Asn
 50 55 60

Gly Lys Lys Val Arg Phe Tyr Thr Glu Arg Asp Pro Ala Ala Ile Pro
 65 70 75 80

Trp Lys Glu Thr Gly Ala Glu Tyr Ile Val Glu Ser Thr Gly Val Phe
 85 90 95

Thr Thr Lys Asp Lys Ala Ala Ala His Leu Lys Gly Gly Ala Lys Lys
 100 105 110

Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro Met Tyr Val Met Gly
 115 120 125

Val Asn Glu Glu Thr Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn Ala
 130 135 140

Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala Lys Val Ile His Asp
 145 150 155 160

Lys Phe Thr Ile Ile Glu Gly Leu Met Thr Thr Val His Ser Thr Leu
 165 170 175

Pro Pro Arg Arg Pro Leu Thr Val Pro Pro Pro Arg Thr Gly Ala Val
 180 185 190

Ala Val Val Leu Pro Arg Thr Ser Ser Pro Ala Ala
 195 200

<210> 37
 <211> 204
 <212> PRT

PURA18WO.ST25

<213> Myrothecium

<220>

<221> MISC_FEATURE

<223> partial GPD protein sequence from the strain CBS449.71

<400> 37

Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Ile Val Phe Arg Asn Ala
 1 5 10 15

Val Glu His Ser Asp Val Glu Ile Val Ala Val Asn Asp Pro Phe Ile
 20 25 30

Glu Pro Thr Tyr Ala Ala Tyr Met Leu Lys Tyr Asp Ser Thr His Gly
 35 40 45

Val Phe Lys Gly Glu Val Thr Val Asp Gly Ala Asp Leu Thr Val Asn
 50 55 60

Gly Lys Lys Val Arg Phe Tyr Thr Glu Arg Asp Pro Ala Ala Ile Pro
 65 70 75 80

Trp Lys Glu Thr Gly Ala Asp Tyr Ile Val Glu Ser Thr Gly Val Phe
 85 90 95

Thr Thr Lys Asp Lys Ala Ala Ala His Leu Lys Gly Gly Ala Lys Lys
 100 105 110

Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro Met Tyr Val Met Gly
 115 120 125

Val Asn Glu Glu Thr Tyr Asp Gly Ser Ala Asp Val Ile Ser Asn Ala
 130 135 140

Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala Lys Val Ile His Asp
 145 150 155 160

Lys Phe Thr Ile Ile Glu Gly Leu Met Thr Thr Val His Ser Tyr Thr
 165 170 175

Ala Thr Gln Lys Thr Val Asp Gly Pro Ser Ala Lys Asp Trp Arg Gly
 180 185 190

Gly Arg Gly Ala Ala Gln Asn Ile Ile Pro Ser Thr
 195 200